Section 8: Site Prep, Chemicals and Fire

Site prep, chemical use and prescribed fire should be done in a way that:

-- Minimizes the potential for water pollution;
-- Addresses the landowner's objectives for forest growth, while also protecting water quality;
-- Is appropriate for the site-specific conditions.

Remember:

Refer to the planning checklist in Section 2. This checklist is also very useful when conducting mechanical site prep and other forestry work.

What You Need to Know FPG RULE

There are regulations and requirements that may limit your site prep and forestry work in order to protect water quality. These regulations include:

- North Carolina FPGs
- North Carolina stream or ditch obstruction laws
- N.C. DWQ riparian buffer rules
- North Carolina Dredge and Fill Law
- North Carolina Coastal Area Management Act
- Federal guidance memo explaining six (6) required practices for mechanical site prep in wetlands and when a permit is needed for mechanical site prep in wetlands
- N.C. Administrative Code 02 NCAC 09L establishes requirements for licensing and aerial application of pesticides (includes herbicides)

In wetlands, refer to the six (6) federally-required practices for mechanical site prep activities, as well as other regulations in the back of this field guide.

Overall Mechanical Site Prep Goals

- Limit soil disturbance within SMZs, riparian buffers and other sensitive areas. Identify these locations.
- Minimize mechanical site prep and soil disturbance within and immediately around ephemeral drainages.
- Keep the number of repeated passes with the site prep equipment to a minimum, according to your site prep or forestry management goals.
- Only expose the minimum amount of bare soil as needed, especially on areas with high potential for erosion or near streams.
- The site prep work should not significantly reduce the ability for water to absorb into the soil.
- There may be areas on a site where heavy equipment should not be used in order to protect water quality.

Avoid mechanical site prep when soil is saturated or nearly so. If soil conditions get worse, stop and reassess your options.

Avoid stream crossings.

For shearing, raking or piling:

- Minimize soil movement and the creation of significant areas of bare soil exposure.
- Maintain natural debris and groundcover within ephemeral drainages or dry gullies/hollows.

For windrow or debris pile placement:

- Set windrows along the land contours.
- Leave openings within the windrow and stagger the openings from one windrow to the next.
- Avoid gouging the soil in a way that could funnel runoff to a stream or drainageway.
- Inspect the work; change techniques to correct work that may lead to water quality problems.

Do not place windrows or piles within streams or ephemeral drainages.

Excessive bare soil exposure occurred during this site prep raking work and windrow piling. Soil can easily wash away into nearby streams after rainfall. The natural groundcover layer should have been retained.

For bedding:

- Align the beds along the land contours instead of aligning them up and down the slope.
- Leave undisturbed groundcover between beds.
- When leaving gap openings within the bed rows, stagger the gaps from one bed row to the next. This will help prevent blockage of surface flow.

Do not tie-in beds into water channels that outlet to intermittent or perennial streams.

This site was bedded during optimum soil conditions (not too wet, not too dry). An undisturbed strip of soil was retained between beds.

For drum chopping:

- Minimize the uprooting of trees and stumps.
- Minimize the potential for funneling surface runoff into a stream, ditch or body of water.

For tilling, furrowing, ripping or scalping:

- Till along the land's contours
- Retain undisturbed groundcover and vegetation between the tillage strips.
- Minimize tillage work within ephemeral streams.
- Stop tillage work at the outer edge of the SMZ or riparian buffer.

Tillage should not funnel runoff or sediment into streams or other drainageways.

For lopping:

- Retain sufficient shade within the SMZ.

Keep felled or lopped vegetation out of streams, ditches and drainageways.

For tree planting:

- Operate equipment along the land's contours during machine planting.
- Properly dispose of seedling boxes, bags and culled seedlings so they do not get into streams or ditches.

Forest Chemicals

- **FPG RULE** Read, understand and follow the product label's application and handling requirements for the chemical being used.
- Identify and designate any “no work” areas or locations where chemicals are not to be applied. Communicate this information with all chemical applicators.
- Apply chemicals at least 50 feet away from an intermittent stream, perennial stream or perennial waterbody (lake or pond).
- Avoid broadcast-style of application within or over SMZs and water, unless the chemical to be applied is labeled for aquatic use.
- Maintain accurate and calibrated application equipment so the correct amount of chemical is applied.
- Store, mix and load chemicals away from the SMZ or in a location where they will not wash into the water.
- Dispose of all containers according the product label's requirements.

Do not burn or bury chemical containers or any other trash on the job site.

Fire Management

Remember:

This section only covers prescribed burning. For situations related to the control of wildfires, refer to the forestry BMP manual.

- Keep soil, trees, logs, stumps and other debris out of streams and ditches. Promptly remove this debris from the stream or ditch.
- Consider using natural firebreaks to minimize the need for plowed, bladed or hand-dug firelines.
- When creating plowlines, bladed lines or hand-lines:
  - Only plow/dig as deep and/or wide as necessary.
  - Keep firelines out of SMZs, buffers, marshes or other sensitive areas. Consider hand-lines.
  - If tying-in the fireline for an anchor point at a stream or other body of water, keep the duration of time the line is tied-in as short as possible. During mop-up, immediately rehab and stabilize the line.
  - Follow the land's contours if possible.
  - Keep the slope of the firelines to 25% or less.
  - Install and maintain erosion control structures such as turnouts, waterbars and/or sediment pits.
- Promptly revegetate and/or stabilize firelines that pose a risk of accelerated erosion into the water.

Keep high intensity prescribed burns out of the SMZ and/or riparian buffer.

BEFORE: *A plowed fireline can create a gully that funnels runoff and sediment to streams.*

AFTER: *Rehab work on this fireline included reshaping the plowline, seeding it and mulching.*